APPENDIX A

Constitutional Provision

ARTICLE I—LEGISLATIVE DEPARTMENT

SECTION 8. LEGISLATIVE POWERS OF CONGRESS

"The Congress shall have power: . . .

"8. To promote the progress of science and useful arts, by securing for limited times, to authors and inventors, the exclusive right to their respective writings and discoveries: . . ."

Title 35, United States Code

"§ 103. CONDITIONS FOR PATENTABILITY; NON-OBVIOUS SUBJECT MATTER

"A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made."

"§ 112. SPECIFICATION

"The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention. . . ."

Appendix A.

Federal Rules of Civil Procedure

RULE 52. FINDINGS BY THE COURT

"(a) Effect. In all actions tried upon the facts without a jury or with an advisory jury, the court shall find the facts specially and state separately its conclusions of law thereon, and judgment shall be entered pursuant to Rule 58; and in granting or refusing interlocutory injunctions the court shall similarly set forth the findings of fact and conclusions of law which constitute the grounds of its action. Requests for findings are not necessary for purposes of review. Findings of fact shall not be set aside unless clearly erroneous, and due regard shall be given to the opportunity of the trial court to judge of the credibility of the witnesses. The findings of a master, to the extent that the court adopts them, shall be considered as the findings of the court. If an opinion or memorandum of decision is filed, it will be sufficient if the findings of fact and conclusions of law appear therein. Findings of fact and conclusions of law are unnecessary on decisions of motions under Rules 12 or 56 or any other motion except as provided in Rule 41(b). As amended Dec. 27, 1946, eff. March 19, 1948; Jan. 21, 1963, eff. July 1, 1963."

Appendix A.

Revised Rules of the Supreme Court of the United States

PART V. JURISDICTION ON WRIT OF CERTIORARI.

19.

CONSIDERATIONS GOVERNING REVIEW ON CERTIORARI.

"1. A review on writ of certiorari is not a matter of right, but of sound judicial discretion, and will be granted only where there are special and important reasons therefor. The following, while neither controlling nor fully measuring the court's discretion, indicate the character of reasons which will be considered:

* * *

"(b) Where a court of appeals has rendered a decision in conflict with the decision of another court of appeals on the same matter; or has decided an important state or territorial question in a way in conflict with applicable state or territorial law; or has decided an important question of federal law which has not been, but should be, settled by this court; or has decided a federal question in a way in conflict with applicable decisions of this court; or has so far departed from the accepted and usual course of judicial proceedings, or so far sanctioned such a departure by a lower court, as to call for an exercise of this court's power of supervision."

APPENDIX B

Opinion of District Court

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF GEORGIA

ATLANTA DIVISION

Filed and Entered in Clerk's Office
Aug 30 1963

B. G. NASH, Clerk
By: RJT, Deputy Clerk

CIVIL ACTION No. 7000

MOHASCO INDUSTRIES, INC.,
a New York corporation,

Plaintiff,

vs.

E. T. BARWICK MILLS, INC.,
a Georgia corporation,

and

BARWICK CARPET MILLS, INC.,
a Georgia corporation,

Defendants.

STATEMENT OF THE CASE

This cause came on to be tried before the Court, sitting without a jury, on February 4th through February 12th, 1963. This is an action for alleged infringement of two patents brought by Mohasco Industries, Inc., a New York

corporation (hereinafter referred to as Mohasco) against E. T. Barwick Mills, Inc., and Barwick Carpet Mills, Inc., both Georgia corporations. For the purposes of this suit, defendant Georgia corporations will be hereinafter referred to as Barwick. The patents alleged to be infringed are:

Patent	*Filed*	*Issued*	*Claims in Suit*
Odenweller No. 2,853,032	4/ 1/54	9/23/58	1, 3, 6, 8, 9
Crawford No. 2,853,033	7/22/54	9/23/58	1, 3, 4, 5, 8, 10, 11

A third patent, Crawford No. 2,853,034, which was originally charged to be infringed, has been withdrawn from suit.

The patents in suit relate to apparatus called "pattern attachments" which are applied to the large special-purpose sewing machines used for making tufted carpet. These attachments control the feed of yarn to the machines in such a way as to cause the machines to produce carpets in which some of the loops or tufts of the carpet are longer or higher than others, the low loops and the high loops being distributed over the surface of the carpet in a prearranged pattern.

Discussion

The principal defense which defendant Barwick asserts and claims to be controlling is that the patents are invalid in view of the statutory disqualification from patenting, citing the portion of 35 U. S. C., Section 103, which provides in part:

> "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole *would have been obvious* at the time the invention was made to a person having

ordinary skill in the art to which the said subject matter pertains." (Emphasis supplied.)

This statutory requirement that a patent may not be sustained if its subject matter "would have been obvious" to one skilled in the art is the principal ground of invalidity in a large proportion of the many cases in which patents, duly issued by the Patent Office, are held by the courts to be invalid.

It has long been a matter of concern that, despite concerted efforts to avoid the issuance of patents which do not meet the statutory requirements as interpreted and enforced by the courts, such patents, nevertheless, continue to be issued. That it is the duty of the courts to protect the public against the enforcement of patents which do not meet the statutory requirements is clear.

Before setting forth the Court's findings of fact and conclusions of law (proposed findings of fact and conclusions of law having been submitted by both the plaintiff and defendant in the case at hand) the Court shall review briefly what it construes to be the controlling principles of law in the matter.

It will be noted that the statutory requirement of unobviousness is in the subjunctive. The significance of this is to disqualify, as the subject of a valid patent, not merely what was in fact obvious to persons skilled in the art, but also what would have been obvious to a hypothetical person skilled in the art in the sense that he was aware of all the ramifications of the machinery and mechanical principles which have been used or suggested for use in the art, regardless of his actual knowledge of them, combined with the occasion and incentive to apply this knowledge. It is admittedly difficult to judge what "would have been obvious" to such a hypothetical person. In the present case, however, this difficulty largely disappears, for in this case the subject matter of the patents was in fact independently and spon-

taneously thought of almost simultaneously by a number of persons concerned with the problem, in different parts of the country,[1] as soon as the occasion to do so arose.[2] The fact that all three concerned themselves with the problem at about the same time and independently built the patent attachments demonstrates to this Court that the subject matter "would have been obvious".

Since patents are restrictions upon the natural right of members of the public to avail themselves of the abilities of skilled artisans, and upon the right to free competition which is basic to our economic system, monopolies based on patents must be jealously scrutinized by the courts to make certain that they are of the character which the statutes authorize. As the Supreme Court said in *A. & P. Tea Company* v. *Supermarket Corporation*, 340 U. S. 147, 152, 154-55 (1950):

> "The function of a patent is to add to the sum of useful knowledge. Patents cannot be sustained when, on the contrary, their effect is to subtract from former resources freely available to skilled artisans" (p. 152).
>
> • • •
>
> "Every patent is the grant of a privilege of exacting tolls from the public. The Framers plainly did not want those monopolies freely granted. The invention, to justify a patent, had to serve the ends of science—to push back the frontiers of chemistry, physics, and the like; to make a distinctive contribution to scientific

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[1] (a) Odenweller of James Lees & Sons of Philadelphia, Pennsylvania, 1954;

(b) Crawford of Mohawk (later Mohasco) of Amsterdam, New York, 1954;

(c) Parker and Short of Callaway Mills Company of LaGrange, Georgia, 1955.

[2] Parker and Short built a model slat attachment in a period of a little more than a week after having been exposed to the problem.

knowledge. That is why through the years the opinions of the Court commonly have taken 'inventive genius' as the test. It is not enough that an article is new and useful. The Constitution never sanctioned the patenting of gadgets. Patents serve a higher end—the advancement of science. An invention need not be as startling as an atomic bomb to be patentable. But it has to be of such quality and distinction that masters of the scientific field in which it falls will recognize it as an advance. Mr. Justice Bradley stated in *Atlantic Works* v. *Brady*, 107 U. S. 192, 200, the consequences of a looser standard:

> " 'It was never the object of those laws to grant a monopoly for every trifling device, every shadow of a shade of an idea, which would naturally and spontaneously occur to any skilled mechanic or operator in the ordinary progress of manufactures. Such an indiscriminate creation of exclusive privileges tends rather to obstruct than to stimulate invention. It creates a class of speculative schemers who make it their business to watch the advancing wave of improvements, and gather its foam in the form of patented monopolies, which enable them to lay a heavy tax upon the industry of the country, without contributing anything to the real advancement of the arts. It embarrasses the honest pursuit of business with fears and apprehensions of concealed liens and unknown liabilities to lawsuits and vexatious accountings for profits made in good faith.' "

To the same effect are the holdings of the Court of Appeals of this Circuit in *Glikin* v. *Smith*, 269 F. 2d 641, 651 (5 Cir. 1959), cert. denied 361 U. S. 915:

> "The patentee's claims, as he construes them in this case, are broad in scope and far-reaching in effect.

Appendix B.

> A substantial segment of the hearing aid industry and an enormous number of the hard of hearing public will be affected if the patentee's contentions should be sustained in this litigation. In the circumstances, the interest of the public, paramount to the interests of the patentee and of the user of the accused device, compels a close scrutiny of the plaintiff's claim of invention."

and in *Stabler* v. *Bright Leaf Industries, Inc.*, 261 F. 2d 383, 385 (5 Cir. 1958), cert. denied 359 U. S. 960 (1959):

> "Inventions require close scrutiny lest patent monopolies be granted to 'each slight technological advance in an art' merely because it is useful."
>
> See also *Anthony* v. *Ranco, Incorporated,* 316 F. 2d 509, 512 (5 Cir. 1963).

The patent statutes set forth certain requirements which must be met if a patent is to be held valid. The most important of these, the requirement of "invention", is the focal issue in this case.

Here the question of patentability boils down to the question of invention, that is, whether the subject matter "would have been obvious" to one skilled in the art so as to come within the prohibition of Section 103 of the patent statutes quoted above. Barwick contends that the devices disclosed and claimed in the patents in suit do not involve invention.

Generally, all patents, publications and public uses which have been in existence prior to a patentee's date of invention or more than a year prior to his filing date are referred to as "prior art". If a patentee's alleged invention is identically disclosed in the prior art, it clearly is not new. In such a situation, the alleged invention is said to lack novelty and the patent must be declared to be invalid.

Appendix B.

It is where the patentee's alleged invention is not identically disclosed in the prior art as defined above, and, therefore, is not directly anticipated, that the conception of "invention" or "obviousness" becomes an issue. To evaluate invention, one must first determine just what difference or differences exist between the patentee's contribution and the prior art, and then determine whether this difference measures up to the statutory definition of invention.

In making inquiry regarding obviousness, it is important to note that the prior art includes all patents, publications and uses, etc., irrespective of whether a particular patentee was aware of them or not. Certainly no one person could possibly keep abreast of all the scientific and engineering advances in this rapidly changing world, but the purpose of the patent law is to encourage the disclosure of new, non-obvious developments, and the monopoly which a patent carves out of the public domain is granted only in exchange for such developments. Therefore, a patentee's contribution must be measured against the entire body of prior art, and he is presumed by law to have been familiar with the whole prior art as it existed at the time he made his contribution. See *Mast, Foos & Company* v. *Stover Manufacturing Company,* 177 U. S. 485, 494.

The hypothetical person "having ordinary skill in the art" has been characterized by the cases as a person of education and training in his art. Speaking with regard to the communications art, the Court in *Radtke Patents Corporation* v. *Coe,* 122 F. 2d 937, 946 (D. C. Cir. 1941), cert. denied 314 U. S. 695 (1941) defined persons skilled, and their knowledge of their calling, thus:

> "the knowledge of the prior art is not limited to the knowledge of lawyers or of the public generally, but is that of the experts and scientists, the trained engineers who have been working for many years in the electrical art of sound communication. If expert testi-

mony and prior scientific publications reveal such knowledge, sufficient to teach such men or to suggest to them what is here claimed to be invention, then the fact that such claims may seem remarkable, or new, or profound, to lawyers or to the public generally, is not sufficient to constitute invention."

Likewise, cases hold that obviousness must be measured in terms of persons whose business it is to design and build the things in question, not those who only use them. For example, what in the present case would have been obvious to a tufting machine designer cannot be inventive no matter how obscure or mysterious it might have seemed to a carpet manufacturer who merely uses such machines and consequently has no occasion to be concerned with the intricacies of their design. *Zoomar, Inc.* v. *Paillard Products,* 152 F. Supp. 328, 331 (S. D. N. Y. 1957), affirmed 258 F. 2d 527 (2 Cir. 1958), cert. denied 358 U. S. 908 (1958).

The test of obviousness as the test of invention is not new with the quoted section of the Patent Act of 1952, although it was first expressed by statute at that time. Long before the statute was enacted, the courts had applied the test, first announced by the Supreme Court in 1850 in *Hotchkiss, et al.* v. *Greenwood, et al.,* 11 How. (52 U. S.) 248, 266 (1850). To the same effect are the consistent holdings of the Court in a long line of cases such as *A. & P. Tea Company* v. *Supermarket Corporation, supra,* and *Atlantic Works* v. *Brady,* 107 U. S. 192, 200.

Nor was Section 103 intended to change or modify in any way the standard of invention as expressed by the prior decisions, *Vincent* v. *Suni-Citrus Products Company,* 215 F. 2d 305, 315-16 (5 Cir. 1954), cert. denied 348 U. S. 952 (1955):

"The object and purpose of the patent statutes is to promote really novel advances in the art, rather than those attributable merely to a person having ordinary

skill in the trade. The judgment in this case was entered before the enactment of Section 103 of the Patent Act of 1952, 35 U. S. C., Sec. 103, and this section, therefore, is not specifically applicable in the decision of this case. Nevertheless, since the section purports and has been construed to merely embody existing law, . . ."

* * *

"It is sufficient to say that, if we should assume that either of these processes is new in the sense of not having been tried before, we should be obliged to hold that they present nothing novel since what they purport to do would have been perfectly obvious, at the time the invention was made, to a person having ordinary skill in the art of liming and drying citrus waste. Though, therefore, that process may be as useful and efficient as other liming and drying methods are, or even more so, nevertheless, it is perfectly plain that they claim nothing which so advances the art as to justify monopoly protection. Altoona Publix Theatres, Inc. v. American Tri-Ergon Corp., 294 U. S. 477, at page 486."

Subsequent opinions in the Fifth Circuit have reaffirmed this view. See *Glikin* v. *Smith,* supra, and *Stabler* v. *Bright Leaf Industries, Inc.,* supra.

Finally, it should be noted that while obviousness is the test of invention, this test is to be applied more strictly in the case of combination patents. A "combination patent" claims an invention which purports to be a new combination made up of a number of elements, each of which itself is old. The courts have held that there is an inherent improbability that the subject matter of such patents can amount to invention, and therefore combination patents are viewed critically. *A. & P. Tea Company* v. *Supermarket Corporation,* supra.

Appendix B.

In striking down a combination patent in *Fritz W. Glitsch & Sons* v. *Wyatt Metal & Boiler Works,* 224 F. 2d 331, 334 (5 Cir. 1955), the Court of Appeals of this Circuit referred to "the stricter test for patentable invention now required to justify monopoly protection". In *Glikin* v. *Smith,* 269 F. 2d 641, 651-52, the Court of Appeals of this Circuit held:

> "A presumption of validity attaches to a patent. Because of this presumption and because a patent is a legislatively condoned monopoly that is not granted willy nilly to just any advance or improvement in commerce, combination patents are viewed strictly. This is particularly true where the elements in the combination are old and known to the art, since a liberal construction of such combination claims would erase the line, such as it is, between mechanical judgment and inventive skill."

The patents sued on in this case are for combinations.

To be sure, the issuance of a patent carries with it a presumption of validity (35 U. S. C., Sec. 282) but the Courts recognize the problems which inhere in an immense administrative operation such as is carried on by the Patent Office and have minimized the presumption accordingly. See *Gentzel* v. *Manning, Maxwell & Moore, Inc.,* 230 F. 2d 341, cert. denied 352 U. S. 840; *Wabash Corporation* v. *Ross Electric Corporation,* 187 F. 2d 577.

The fact that the Patent Office issues a patent does not necessarily mean that the subject matter was patentable. Pursuant to a rule of long-standing, still in existence today, the Patent Office must grant a patent even when in doubt as to its patentability. *In re Thomson,* 26 App. D. C. 419, 1906 C. D. 566, 571 (1906):

> "In case of ordinary doubt, the policy of the patent system, as customarily maintained in the Patent Office,

has been to give the applicant the benefit thereof, because no absolute right of property is conferred by the grant of a patent. (*Ex parte Fanshawe*, C. D., 1891, 203; 57 O. G., 1127). The patentee is merely put in a position to assert his *prima facie* right against infringers who may, in their defense, raise the question of the validity of the patent, and have the same finally adjudicated in the light of a full presentation and consideration of all the evidence attainable in respect of anticipation, prior knowledge, use and the like."

See also *Application of Hummer*, 241 F. 2d 742, 746, and *Application of Citron*, 251 F. 2d 619, 620.

Considering what has been said, it is hardly surprising that Courts have observed that the standard of patentability in the Patent Office is below that required by the Courts. *Packwood* v. *Briggs & Stratton Corporation*, 195 F. 2d 971, 974 (3 Cir., 1952) cert. denied 344 U. S. 844 (1952); *Picard* v. *United Aircraft Corporation*, 128 F. 2d 632, 641 (2 Cir. 1942) cert. denied 317 U. S. 651 (1942):

"The Patent Office grants from 50,000 to 100,000 patents each year. The Committee of the Science Advisory Board reported that it was one of the primary defects in our patent system that the Patent Office issues 'an enormous number of patents, many of which should never be issued * * *' That probably means, as the Committee intimated, that *the standard of inventiveness employed by the Patent Office is far below that employed by the courts.*" (Emphasis supplied.)

The history of the development of the attachment here concerned constitutes, in this Court's opinion, the most reliable evidence as to the presence or absence of invention. When several persons, such as Odenweller of James Lees, Crawford of Mohasco, and Parker and Short of Callaway,

addressing themselves to the same alleged problem each independently arrive at the same solution shortly after the problem is presented, lack of a patentable invention is strongly indicated.

In evaluating "invention", that is, obviousness, the critical importance of the surrounding circumstances was emphasized by Judge Learned Hand in *Safety Car Heating and Lighting Company* v. *General Electric Company,* 155 F. 2d 937, 939-40 (2 Cir. 1946).

The Courts have consistently held that evidence of simultaneous solution of a problem by several independent workers is such as to "effectively refute" any suggestion that the solution was unobvious or involved invention. *Graham* v. *Jeoffroy Manufacturing,* 206 F. 2d 769, 771 (5 Cir. 1953):

> "The District Court, in holding the patent invalid for lack of invention and anticipation by the prior art, found that when the bending and breakage of the beams on the plows occurred, two individuals, Floyd W. Tyler and J. A. Robinson, independently and without any knowledge of the Graham device, developed and used an angular brace to reinforce their clamps and plow beams very similar to that of the patent in suit. In this connection, appellees concede that the Graham structure probably antedated the Tyler and Robinson developments and, therefore, that the latter may not be relied upon for the purpose of anticipating Graham. However, even though these developments admittedly do not rise to the dignity of patentable invention, we think they nevertheless remain significant as tending to reveal spontaneous and independent solutions of the problem without any knowledge of the Graham device by ordinary un-skilled farmers and laymen, and effectively refute appellant's claim that the Graham patent involved any invention, or anything beyond the skill of an ordinary workman or mechanic."

To the same effect, see *Thomson Company* v. *Ford Motor Company,* 265 U. S. 445, 452-53. And especially is this so when each of the several independent workers addressed himself to the problem, and quickly found the solution, only shortly after the need for a solution became apparent, as did Parker and Short in the case at hand. See *McElrath* v. *Industrial Rayon Corporation,* 123 F. 2d 627, 629 (4 Cir. 1941); *Fluor Corporation* v. *Gulf Interstate Gas Company,* 259 F. 2d 405, 407-08 (5 Cir. 1958); *J. R. Clark Company* v. *Murray Metal Products Company,* 219 F. 2d 313, 318 (5 Cir. 1955).

In the case under consideration, several persons who had occasion to address themselves to the manufacture of patterned, or textured, tufted carpet independently arrived at substantially the same device for doing so very shortly after the desire to have such a product arose. The facts are strikingly similar to those in the *Safety Car Heating and Lighting* case above referred to.

The foregoing discussion and cases cited therein appear applicable to the principal issue in the case under consideration, and after having considered the testimony, the exhibits and depositions, along with the briefs of both parties and the proposed findings of fact and conclusions of law (submitted by both parties), the Court hereby makes the following findings of fact and conclusions of law.

Findings of Fact

1.

Mohasco Industries, Inc., plaintiff, is a New York corporation having its principal place of business in Amsterdam, New York. Defendants are E. T. Barwick Mills, Inc., and Barwick Carpet Mills, Inc., a wholly-owned subsidiary, both Georgia corporations. There is no dispute as to juris-

diction and venue. Defendants are referred to as Barwick, as for the purpose of this case no distinction need be made between them.

2.

The complaint in this action, filed November 4, 1959, charges defendants with infringement of Odenweller Patent No. 2,853,032 and Crawford Patent No. 2,853,033, both of which issued to plaintiff on September 23, 1958, and are still owned by plaintiff. Plaintiff relies on Claims 1, 3, 6, 8, and 9 of Patent 2,853,032 and Claims 1, 3, 4, 5, 8, 10, and 11 of Patent 2,853,033, and alleges infringement thereof by defendants' manufacture and use of slat pattern attachments for the production of patterned tufted carpets. Defendants have denied infringement and allege that both patents in suit are invalid because the subject matter they purport to monopolize "would have been obvious at the time the invention was made to a person having ordinary skill in the art". Defendants have also counterclaimed for a declaratory judgment of invalidity and non-infringement on the same grounds.

3.

Odenweller Patent 2,853,032, entitled "APPARATUS FOR CONTROLLING PILE HEIGHT", is directed to a device, called a slat pattern attachment, for controlling the feed of yarns to the needles of a tufting machine, thus to control the height of pile loops created in the carpet made on the tufting machine. The pattern attachment consists of a pair of intermeshing gears which extend the full width of the tufting machine. The teeth on one of the gears are of uniform height, both with respect to one another and along their length, whereas the teeth or slats on the other gear are varied in height along their length in accordance with a desired pattern. The sheet of yarns to be fed to the tufting machine, one yarn for each individual needle, is passed

through the intermeshing zone between the variable-height teeth or slats carried on the surface of one gear and the fixed-height teeth on the surface of the other. When an individual yarn encounters a slat of low height, which, due to its low height, intermeshes only slightly with the teeth of the other gear, the amount of yarn taken up in the intermeshing will be small, a correspondingly small amount of feed will result, and because the height of the pile loops in the resultant fabric is dependent upon the amount of yarn feed, a low loop will result. If a yarn encounters a slat of full height, a greater amount of yarn is taken up in the intermeshing, a correspondingly greater amount of yarn is fed, and a high loop results in the fabric. Thus, a pattern of high and low loops, determined by the contour of the variable-height slats carried by one of the gears, is created in the pile fabric manufactured by the tufting machines.

4.

Crawford Patent 2,853,033, entitled "METHOD AND APPARATUS FOR FEEDING YARNS", is directed to a device which is the same in principle but differing in certain mechanical aspects from that of the Odenweller Patent 2,853,032. In the Crawford patent of variable-height slats and the fixed-height slats are mounted on endless chains rather than on the surface of cylindrical drums in the manner of gear teeth. Claims 4, 5, 8 and 10 of Patent 2,853,033 are directed to this apparatus, whereas Claims 1, 3 and 11 of this patent are directed to a method of feeding yarns through the use of this apparatus.

5.

The slat attachments of the patents in suit rely in their operation upon the principle that the height of the pile loops in tufted carpet can be controlled by restricting the

amount of yarn fed to the needles of a tufting machine. At the time the alleged inventions of the patents in suit were made, this principle was not new. Patent 2,876,441 to Boyles, covering this basic concept, was issued after a nine-party interference in the Patent Office which Odenweller and Crawford declined to join, thereby conceding that they had no basis for claiming authorship of this basic concept. Plaintiff does not contend that either patentee originated this principle of controlling pile height by controlling the rate of yarn feed. The application for the Boyles patent was filed in February, 1952, nearly two years prior to the work of either Odenweller or Crawford, and, hence, is prior art with respect to both patents in suit. The Boyles patent was not cited by the Patent Office against the applications for the two patents in suit.

6.

Prior to the time of the alleged inventions of the patents in suit, it was common practice to selectively produce high and low loops in tufted carpet, and thus achieve patterns in such carpets defined by the high and low pile loops, by the application of this principle of controlled yarn-feeding set out in Paragraph 5 above. The use of rollers to feed yarn was well known, and the manufacture of patterned tufted carpet was accomplished largely through the use of roller-type feeding attachments in which the yarns fed to the needles of a tufting machine were passed in contact (in the shape of a letter S) around and between a pair of feed rolls which could be driven at high or low speeds depending on whether a high or low loop was desired. Patterns were made with attachments of this sort by selectively varying the speeds of each of a number of rolls and thus creating high and low loops in accordance with a predetermined pattern.

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7.

Yarn-feeding devices known as furnishing wheels also were old and well known at the time the alleged inventions of the patents in suit were made. Yarn-furnishing wheels are nothing more than a pair of intermeshing gears wherein the yarn to be fed is passed through the intermeshing zone between the gears, the intermeshing causing undulations in the yarn. For a given speed of rotation of the gears, the amount of yarn released for each increment of rotation is directly proportional to the extent that one of the gears intermeshes with the other—a greater degree of intermesh releasing a longer length of yarn upon the disengagement of a pair of teeth and a smaller degree of intermesh releasing a shorter length of yarn. Yarn-furnishing wheels of this sort are disclosed by Patent 2,432,685 to Sawyer and Patent 2,247,245 to Lawson, neither of which was cited by the Patent Office against the applications for the two patents in suit.

8.

The patentee Odenweller, an employee of James Lees & Sons of Philadelphia, was the first to build a slat pattern attachment. Odenweller did his work in the fall of 1953, less than a year after he had first been exposed to tufting machines. The idea of applying the intermeshing principle to a pattern attachment for a tufting machine occurred to him while he was driving in his car to Bethlehem, Pennsylvania, to keep a date in October of 1953. Thereafter he did not immediately disclose his ideas to his superiors but kept them to himself for a time because he said he was "patent crazy", as was everyone else in the tufting industry. On January 8, 1954, Odenweller made a complete disclosure of his design to his superior at James Lees, which disclosure substantially conformed to the device shown in his patent in suit, No. 2,853,032. Shortly thereafter Lees

appropriated sufficient money to Odenweller for the construction of a model machine in accordance with his ideas, and he proceeded with plans to build a model. Later, on January 15, 1954, he submitted to his superiors at James Lees an amplification of his original disclosure. In this amplification he stated as a design alternative that the variable-height slats in his device might be carried by chains rather than drums. This is the substance of the Crawford patent in suit.

9.

The patentee Crawford's first exposure to commercial tufting machines came in the fall of 1953 after he had been assigned to work in the experimental department of Mohawk, corporate predecessor of the present plaintiff. In the spring of 1953, Mohawk had purchased a tufting mill in Laurinburg, South Carolina, and Crawford was sent there to work with the tufting machines, which were not operating properly. In Laurinburg, while working with tufting machines equipped with a single feed roll and intended to produce tufted carpet of plain pile height, Crawford first became aware of the principle that the control of yarn feed controls the height of pile tufts in tufted carpet. Shortly after his return to Amsterdam that fall, he devised his slat pattern attachment and, some time in early 1954, built a small model with slats about one inch wide carried by chains to test his theories. The model proved workable, so Crawford built a sample-sized slat attachment, and thereafter a full-sized slat attachment for use on a production tufting machine.

10.

Parker and Short were machine designers employed by Callaway Mills of LaGrange, Georgia. On June 20, 1955, Parker and Short were asked by Hans Lewis of Callaway's

Valway plant to look at a pattern attachment Callaway had purchased on trial from the Specialty Machine Company of Dalton, Georgia, to see if it could be made to operate properly. This Specialty attachment had rollers with abrasive surfaces and, although its principle was sound, it was not operating up to production standards because the abrasive surfaces on the rollers "fluffed up" the particular type of yarn they were trying to use with the attachment. Parker thought he could design a better feeding attachment, relying on the intermeshing principle, and by June 24th (4 days later), working in conjunction with his assistant, Short, he had reduced the height of a few teeth on one of a pair of gears and used these gears to feed a single yarn to the needle of an experimental tufting machine. These gears controlled the feed in such a way as to produce high and low loops. Thus fortified with confirmation of the thought that the intermeshing principle of furnishing wheels could be applied to feeding yarn to a tufting machine, Parker and Short felt they "had the problem licked", and so set out to design a sample attachment. In doing this, only a few days after having built and tested the gears, Parker and Short decided to use intermeshing slats carried by chains rather than gears in their design. Thereafter they built a model slat attachment employing intermeshing slats carried by chains, tested it and found it satisfactory, and began construction of a commercial-sized attachment. In a period of little more than a week after their first exposure to the problem, Parker and Short had "invented" the devices of both the Odenweller and Crawford patents.

11.

"Doc" Williams, President of Modern Tufting Company in Dalton, Georgia, made a single-strand slat pattern attachment in 1956 to determine whether or not the intermeshing principle could be applied to feeding yarns to a tufting ma-

chine. Williams' single-strand model proved successful, and thereafter he built a full-sized slat attachment and began using it in the production of tufted carpet in the fall of 1959.[3]

12.

Crawford, Parker and Short, and Williams, in devising their slat pattern attachments, built small models using intermeshing elements to control the feed of a single strand of yarn because they knew that if the intermeshing principle could be employed to control a single strand, it could be used to control as many strands as desired. The intermeshing principle of any slat attachment, whether the slats are carried by cylindrical drums or chains, is properly represented by a model capable of feeding a single strand. So represented, slat pattern attachments relying on the intermeshing principle differ from furnishing wheels only in that in the slat attachment the varying degree of intermesh is achieved by varying the height of the intermeshing elements, whereas in furnishing wheels it is achieved through varying the spacing of the centers of the gears.

13.

At the times that they made the devices set out in Paragraphs 8 through 11 above, Odenweller, Crawford, Parker and Short, and Williams were mutually unaware of one another and each did his work independently. They also were all unaware of furnishing wheels which rely upon the intermeshing principle to control yarn feed.

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[3] The Court heard evidence of Williams' work subject to objection of plaintiff that such work was not contemporaneous within the meaning of the statute, Section 103, and therefore irrelevant. This Court holds the evidence of Williams relevant and admissible. See *Safety Car Heating & Lighting Company* v. *General Electric Company*, 155 F. 2d 937, 939-940.

Appendix B.

14.

It would have been obvious to a person of ordinary skill in the tufting art to control the feed of yarn to the needles of a tufting machine, to achieve patterns defined by high and low loops in accordance with Boyles' old and well known controlled-feed principle, through the use of the old and well known intermeshing principle of furnishing wheels.

15.

The fact that each of four different persons or groups of persons was able to devise slat pattern attachments as soon as the desire to make them manifested itself is a well-nigh conclusive demonstration that to make such an attachment not only would have been, but in fact was, obvious to persons having ordinary skill in the art. Indeed, the fact that each of the persons who accomplished this was without knowledge of the most pertinent prior art—furnishing wheels—makes it much more conclusive that the result would have been obvious to a person having this knowledge, which is imputed by law to be a hypothetical man skilled in the art to whom a device must be unobvious to meet the statutory requirement for patentability.

16.

The Boyles patent, basic to the concept of forming high and low loops in tufted fabric by controlling the feed of yarn to the needles of a tufting machine, contemplates the formation of low loops by the withdrawal or "robbing" of yarn from the previously formed loop as the needles of the tufting machine descend to form the next loop. Because it was in fear of a charge of infringement of the Boyles patent, Mohasco sought and obtained another patent, Crawford 2,853,034 (not in suit), disclosing and claiming an alternative to the Boyles technique, which alternate contemplates forming low loops by withdrawing yarn from the loop just

formed instead of robbing yarn from the previously formed loop. Mohasco thought and hoped that this alternative to loop-robbing provided the means to avoid infringement of the Boyles patent.

17.

An interference was declared in the Patent Office between applications for patents which were filed on behalf of Odenweller, Crawford, and Parker and Short. That interference was settled by an agreement among the parties which was precipitated by the fact that Mohasco held title to the application for the Crawford '034 patent, not involved in the interference, which seemingly offered a way to avoid a charge of infringement based upon the prior and adversely-held Boyles patent. James Lees and Callaway, the owners of the Odenweller and the Parker and Short applications, respectively, agreed to assign their applications to Mohasco and received in exchange free licenses under the applications involved in the interference and the additional application owned by Mohasco. Lees and Callaway were motivated to settle the interference and give Mohasco title to the Odenweller and Parker and Short applications, primarily to obtain the right to use the alternative to loop-robbing of Crawford '034. The circumstances of this settlement, together with the circumstances of the filing of the application for Crawford's '034 patent mentioned in Paragraph 16 above, minimize the importance of the patents in suit compared with that which was attributed (whether rightly or wrongly) to Crawford's '034 patent.

18.

After this settlement of the interference mentioned in Paragraph 17 above, Mohasco undertook to offer licenses to the tufting industry under its Odenweller, Crawford

'033, and Crawford '034 patents. In these offers Mohasco emphasized that its patent to Crawford, 2,853,034 (not to be confused with Crawford Patent 2,853,033 in suit) offered a way to avoid the Boyles patent and, as an added inducement, agreed in its standard license contract to hold its licensees harmless in any suit on the Boyles patent. Licenses were taken by about thirteen tufters, out of about eighty in the industry as a whole. But, to whatever extent Mohasco's licensees considered patents at all, they were motivated to take a license by the indemnity against suit on the Boyles patent which Mohasco offered them. None of plaintiff's licensees was motivated to take a license by the strength of the patents here in suit, 2,853,032 and 2,853,033. The licensees whose testimony was offered at the trial stated that they had made no inquiry into the scope or validity of these patents, but had taken their licenses either (1) simply to get the attachment from Mohasco, the only source from which it was then available, or (2) if they considered patents at all, to take advantage of the 2,853,034 patent's avoidance of the Boyles patent and its accompanying indemnity. Furthermore, most of plaintiff's licensees, representing only a small segment of the tufting industry, were small manufacturers having neither the means nor the inclination to engage in a legal battle with Mohasco to test the validity of Mohasco's patents. Under these circumstances, the licenses are no tribute to the patents in suit.

19.

When the Boyles patent issued, it was owned by a Georgia patent holding company called Tufted Patterns, Inc. Barwick, by virtue of its interest in a patent to Nix, a Barwick employee, obtained a free license under all of the Tufted Patterns patents, including the Boyles patent. In the summer of 1960, the Boyles and related patents

were sold by Tufted Patterns to Singer-Cobble, a large manufacturer of tufting machines and related equipment, the agreement of sale reciting the existence of the Barwick license. Singer-Cobble threatened Mohasco and its licensees with suit for infringement of the Boyles patent and Mohasco brought suit against Singer-Cobble for a declaratory judgment of invalidity of the Boyles patent. This suit was settled by an agreement between Mohasco and Singer-Cobble, by which Mohasco agreed to pay over to Singer-Cobble 50 percent of most of the royalties it had theretofore received under its licenses and 60 percent of all royalties to be received on future licenses. This agreement testifies to the value attributable in these licenses to the Crawford '034 patent (the supposed way to avoid Boyles) on the one hand and the patents in suit on the other. It further demonstrates that the licenses taken from Mohasco involve no recognition of validity or tribute to the patents in suit.

20.

In the decade between 1952 and 1962 the tufting industry enjoyed enormous growth. In 1952 tufted carpets amounted to only about 7 percent of all carpets produced, whereas in 1962 they amounted to nearly 80 percent. This growth in the tufting industry is attributable to a variety of factors which combined to take tufted carpets out of the category of "sleazy" products and enabled them to compete on a quality basis with woven floor coverings. These factors include the use of jute backings, roller coated latex backings, and double jute backings to give tufted products dimensional stabilty and the feel of quality; improved dyeing techniques, making possible rapid and economic coloring of tufted carpets; and, perhaps most importantly, improved pile fibers, both natural and synthetic. The abilty to produce patterned tufted carpets, afforded by the various types of pattern attachments in use, also con-

tributed in some measure to this growth, but to a lesser extent than any of the factors mentioned above. In the Barwick organization the demand for patterned tufted carpet is decreasing, and in 1962 Barwick's business in patterned carpet was off 1½ million dollars from the previous year.

21.

Slat pattern attachments of the sort the patents in suit purport to monopolize have found some use in the tufting industry but they have not taken the place of pattern attachments relying on the roller principle. Altogether about eighty-five slat attachments are in use in the tufting industry today. In contrast with this, there are about three hundred and forty roller attachments in use, nearly four times as many. About one hundred and fifty 6- or 7-roll pattern attachments, the first and the most rudimentary of the roll-type attachments, have been sold and are in use in the industry. By subsequent refinement, so-called "scroll" attachments, having from sixty to one hundred and twenty rolls, have been devised and have found increasing acceptance in the tufting industry; over one hundred of these attachments have been sold since 1958, and their use is increasing. Universal attachments, which rely on a variant of the basic roller principle in which each yarn is laterally switched from a high or low speed roll, depending on whether the high or low loop is desired, have also been widely used and about ninety of these attachments, manufactured by Singer-Cobble, are in use in the industry today. Other attachments of the same sort, but differing in mechanical detail, are used by other companies, such as Cabin Crafts.

22.

There was no long-felt want for slat pattern attachments in the tufting industry. The various roll-type attach-

ments mentioned in Paragraph 21 above were perfectly adequate to satisfy the demand for patterned tufted carpet, as evidenced by the fact that Lees, Odenweller's employer, though in possession of his model slat attachment and assured of its operability in 1954, elected to make its best-selling carpet on a 6-roll attachment and did not build a slat attachment until 1960. Similarly, Mohasco, Crawford's employer, purchased and used a 6-roll attachment after he had devised and proved his slat attachment. The experience of others in the industry is similar, and these experiences combine to demonstrate that the slat pattern attachment was neither devised to satisfy a long-felt demand nor did it achieve immediate acceptance to the exclusion of other devices capable of performing the same job after it was devised.

23.

Barwick's first sample-sized slat attachment was designed in the fall of 1957, nearly a year before Mohasco's patents issued, by Joe Nix, a Barwick Vice President, and two engineers working under him. This work was done without any knowledge of Odenweller and Crawford or their work, but Nix had some knowledge of Parker and Short's slat attachments which he had obtained from E. F. O'Neal, a former Callaway employee who was then assistant manager of Barwick's Dalton plant. While at Callaway, O'Neal had obtained a general understanding of the operation of Parker and Short's slat attachment and, since Callaway had made no effort to keep it secret, he felt no hesitancy about passing this information on to Nix. After the sample-sized attachment proved workable, Barwick built a full-sized slat attachment, which went into production in June, 1958, several months before the Mohasco patents issued. Thereafter, additional slat attachments were made and put into production.

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24.

In the fall of 1958 plaintiff's patents issued. In May of 1959, Llewellyn, Mohasco's Manager of Merchandise Development, wrote to Mr. Barwick, calling attention to the Mohasco patents and suggesting a license. Mr. Barwick turned the matter over to Nix who, by virtue of his participation in the Tufted Patterns enterprise, was acquainted with the patent situation, both with respect to Tufted Patterns and Mohasco. Nix and other Tufted Patterns principals, including George Hopkins and Edward Taylor Newton, Atlanta patent attorneys, had been considering the patent situation at some length ever since the Mohasco patents had issued, and had concluded that the methods used by Barwick were considerably different from those the Mohasco patents purported to monopolize. On the advice of Nix and his Tufted Patterns associates, Barwick responded to Llewellyn's letter with the contention that Barwick's process was different from anything claimed in the patents. Mohasco was not satisfied with this response and this litigation followed.

25.

A major difference in mode of operation exists between the slat pattern attachments disclosed and claimed in both patents in suit and those used by Barwick. Both patents require in their specification that their slat attachments be operated in synchronism with the needles of the associated tufting machine—in such a manner that one full wave of yarn gripped between intermeshing slats is released for each needle stroke. The specifications of the patents emphasize this as an essential mode of operation, and plaintiff's witnesses, Crawford and Lawrence, both testified at length as to the importance of this feature. Barwick's slat attachments do not operate in this way. In

Barwick's attachment the amount of yarn released for each stroke of the needles of the tufting machine may and does vary from less than a full wave to more than a full wave—Barwick makes no effort whatever to synchronize the release of yarn with the needle strokes. If a Barwick machine were ever operated with the release of yarn and the needle strokes in synchronism, it would be purely by chance and without significance to the operation.

Conclusions of Law

1.

This Court has jurisdiction over the parties and over the subject matter of this action and defendants' counterclaim seeking a declaratory judgment of invalidity.

2.

United States Letters Patents Nos. 2,853,032 and 2,853,033, the patents in suit, issued to plaintiff on September 23, 1958, and were owned by plaintiff on November 4, 1959, when the complaint in this action was filed.

3.

Patents Nos. 2,853,032 and 2,853,033 are entitled to no presumption of validity over the prior art relied upon by defendants which was not cited or considered by the Patent Office; their presumption of validity is further diminished by the fact that the interference in which they were involved was settled by agreement rather than decided by the Patent Office.

4.

Claims 1 to 9, inclusive, of Patent 2,853,032 and Claims 1 to 12, inclusive, of Patent 2,853,033 are each invalid and

void for lack of any patentable invention over the prior art because they define nothing more than an obvious use of the intermeshing principle of yarn-furnishing wheels as illustrated by the patents to Sawyer, 2,432,685, and Lawson, 2,247,245, a use which would have been obvious to a man of ordinary skill in the tufting art at the time the alleged inventions were made.

5.

Plaintiff has failed to prove infringement of Claims 1, 3, 6, 8, and 9 of Patent 2,853,032 and Claims 1, 3, 4, 5, 8, 10, and 11 of Patent 2,853,033, the only claims plaintiff has charged defendants with infringing.

6.

Defendants, E. T. Barwick Mills, Inc., and Barwick Carpet Mills, Inc., are entitled to judgment against plaintiff, Mohasco Industries, Inc., dismissing the complaint with prejudice, adjudging all claims of Patents Nos. 2,853,032 and 2,853,033 invalid and not infringed and with taxable costs to defendants.

JUDGMENT

In accordance with the foregoing findings of fact and conclusions of law, it is hereby ORDERED, ADJUDGED AND DECREED that

1.

Claims 1 to 9, inclusive, of United States Letters Patent No. 2,853,032 are, and each of them is, invalid and void in law.

2.

Claims 1 to 12, inclusive, of United States Letters Patent No. 2,853,033 are, and each of them is, invalid and void in law.

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3.

Claims 1 to 9, inclusive, of United States Letters Patent No. 2,853,032 have not been infringed by defendants.

4.

Claims 1 to 12, inclusive, of United States Letters Patent No. 2,853,033 have not been infringed by defendants.

5.

Plaintiff's complaint for infringement of said Letters Patent is hereby dismissed with prejudice, and plaintiff shall take nothing by its complaint.

6.

Defendants, E. T. Barwick Mills, Inc., and Barwick Carpet Mills, Inc., shall have and recover from plaintiff, Mohasco Industries, Inc., their taxable costs.

This the day of , 1963.

LEWIS R. MORGAN,
United States District Judge.

Appendix B.

Opinion of Court of Appeals

IN THE

UNITED STATES COURT OF APPEALS

FOR THE FIFTH CIRCUIT

No. 20966

MOHASCO INDUSTRIES, INC.,

Appellant,

versus

E. T. BARWICK MILLS, INC. and
BARWICK CARPET MILLS, INC.,

Appellees.

APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF GEORGIA.

(January 22, 1965.)

Before WISDOM and GEWIN, Circuit Judges, and BREWSTER, District Judge.

PER CURIAM: Mohasco Industries, Inc., the plaintiff below, complains of the judgment of the United States District Court for the Northern District of Georgia in favor of appellees (defendants) in an action for patent infringement. The trial court held that the patents in issue were invalid and void and not infringed by the defendants. We are in agreement with the result reached by the trial court. *Mohasco Industries, Inc.* v. *E. T. Barwick Mills, Inc.*, 221 F. Supp. 191 (1963). The judgment is AFFIRMED.

Appendix B.

Judgment of Court of Appeals

UNITED STATES COURT OF APPEALS

FOR THE FIFTH CIRCUIT

OCTOBER TERM, 1964

No. 20966

D. C. Docket No. 7000—Civil Action

MOHASCO INDUSTRIES, INC.,

Appellant,

versus

E. T. BARWICK MILLS, INC. and
BARWICK CARPET MILLS, INC.,

Appellees.

APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF GEORGIA.

Before WISDOM and GEWIN, Circuit Judges, and BREWSTER, District Judge.

JUDGMENT

This cause came on to be heard on the transcript of the record from the United States District Court for the Northern District of Georgia, and was argued by counsel;

ON CONSIDERATION WHEREOF, It is now here ordered and adjudged by this Court that the judgment of the said District Court in this cause be, and the same is hereby, affirmed;

It is further ordered and adjudged that the appellant, Mohasco Industries, Inc., be condemned to pay the costs of this cause in this Court for which execution may be issued out of the said District Court

January 22, 1965

Issued as Mandate:

Appendix B.

Court of Appeals Order Denying Rehearing

IN THE

UNITED STATES COURT OF APPEALS

FOR THE FIFTH CIRCUIT

No. 20966

MOHASCO INDUSTRIES, INC.,

Appellant,

versus

E. T. BARWICK MILLS, INC. and
BARWICK CARPET MILLS, INC.,

Appellees.

APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF GEORGIA.

(March 18, 1965.)

ON PETITION FOR REHEARING

Before WISDOM and GEWIN, Circuit Judges, and BREWSTER, District Judge.

PER CURIAM: In petition for rehearing appellant takes us to task for use of the words in our opinion that we are in agreement "with the result reached by the trial court," and concludes that we have held by implication that some of the findings of the trial court were clearly erroneous and that we may have disapproved of rules of law applied by the trial court. Such interpretation is incorrect. We consider the opinion of the District Court sufficiently informative, and a correct disposition of the issues presented.

Accordingly, IT IS ORDERED that the petition for rehearing be, and the same is hereby DENIED.

APPENDIX C

The History of the Four Inventors

Odenweller

In early 1953, Odenweller's employer, James Lees and Sons, a well known carpet company, was producing patterned tufted carpet by the use of a six-roll attachment and was dissatisfied with the simple patterns obtainable (II 888, 891). The company, accordingly, engaged an outside consultant and organized a team of its engineers including Odenweller for the purpose of devising an attachment which would give independent control of individual pile yarns and produce elaborate floral patterns (II 891-2). The group of engineers had numerous meetings but their efforts resulted only in the design of another form of roll attachment which was built but never went into production (II 908-911). After months of further thought, Odenweller conceived the drum and pinion form of the slat attachment late in 1953 (II 945) and filed his patent application in April, 1954. Odenweller and his associates were thus unable to devise the slat attachment "as soon as the desire . . . manifested itself" (App. B p. 23a) and did not resort to the slat attachment as the obvious solution of their problem.

Crawford

Crawford attempted to solve the problem of producing patterned tufted goods with the individual pile yarns under independent control in late 1952 (I 374) and his proposed solution of the problem at that time was the modified tufting machine shown in his patent 2,850,994 (IV 1819). The machine was theoretically capable of providing independent control of individual pile yarns (II 544) but it was never built (I 383). The machine did not employ intermeshing slats or any similar means for feeding pile yarns at varying rates. In late 1953, Crawford conceived the slat attachment

with the slats mounted on chains (I 388-9) and completed his invention by filing the application for the '033 patent in suit in July, 1954. Crawford's first effort to provide independent pile yarns control was a failure and did not involve intermeshing notched slats. He thus did not invent the slat attachment "as soon as the desire" arose (App. B p. 23a) but about a year later.

Parker and Short

In late 1953 or early 1954, Callaway Mills Company was producing patterned tufted goods by the use of a roll attachment and was dissatisfied with the limited variety of patterns obtainable (III 1042). Accordingly, the Callaway management asked Parker,* the head of the company's mechanical research department (III 955), and his assistant, Short, to develop a pattern attachment which would provide independent control of the individual yarns being fed to a tufting machine (III 1042). In compliance with the request, they built an attachment bearing no resemblance to a slat attachment and of great complexity. The attachment so reduced the speed of the tufting machine with which it was used, that the management would not use it and it was discarded (III 1044-8).

In June, 1955, about 18 months after Odenweller and Crawford had conceived the slat attachment, Parker and Short inspected a pattern attachment which had been purchased by Callaway Mills on a trial basis and was not working well (III 1029). The inspection led to a second attempt by Parker and Short to devise an attachment which would give independent control of individual yarns and, after a number of days of thought, Parker conceived the

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* Parker is a highly skilled inventor who is sole or joint patentee of about 25 inventions, most of which went into commercial use (III 1019).

slat attachment. Thus, when Parker and Short were first faced with the problem of providing independent control of individual yarns being fed to the needles of a tufting machine, they did not immediately invent the slat attachment; their invention of that attachment was on their second attempt 18 months after their first failure.

Williams

In late 1950, Williams, president of Modern Tufting Company* (III 1055), accidentally produced tufted carpet with a pattern of high and low loops in the pile as a result of a defect in the feed roll of the tufting machine (III 1168). He recognized the pattern in the goods and, in January, 1951, he modified the machine to afford better control of the pile yarns being fed (III 1168-9). From the start, Williams was not satisfied with the simple patterns which could be produced and he tried "different ways and methods" (III 1181) of obtaining better yarn control. He wanted to control the individual pile yarns (III 1180) and, in the early '50's, experimented with gears for feeding the yarns (III 1200). However, it was not until late 1957 or early 1958 that Williams conceived the slat attachment and built a one-yarn model (III 1157). Williams' invention of the slat attachment was thus not made "as soon as the desire to make them manifested itself" (App. B p. 23a) but about seven years later.

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* Williams is a highly ingenious man who has received patents on a fringing machine and a tufting machine and has made about 50 developments in tufting machines and processes which have gone into use in his and other factories (III 1117-20).